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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/675,920

09/29/2000

Gary D. Zimmerman

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7590

06/30/2005

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Intellectual Property Administration
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EXAMINER

PHAM, THIERRY L

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/675,920	Applicant(s) ZIMMERMAN ET AL.	
	Examiner Thierry L. Pham	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

- This action is responsive to the following communication: an Amendment filed on 3/14/05.
- Claims 1-18 are pending in application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Young No (U.S. 6587140).

Regarding claim 8, Young No further discloses a removable PC card (PC card 7, fig. 1) for removably coupling with corresponding card slot (printer 5 with PC slot 83, fig. 1) in an office machine comprising:

- a formatter integrated circuit (PC card includes a CPU for processing image/print data, fig. 2, col. 4, lines 39-45) for providing formatter functions; and
- a connector (connector 41, fig. 1) having a print engine ready data interface for coupling to the office machine (couple to office machine via slot 83, fig. 1) and selectively (PC card interface, fig. 3) receiving print engine ready data therefrom;
- wherein the PC card is adapted for insertion into a corresponding PC card slot (adapted to insert via slot 83, fig. 1) in the printer and wherein the formatter integrated circuit may provide formatter functions (i.e. printing instructions, col. 2, lines 25-38 and col. 39-45) to the printer when coupled thereto.

Regarding claim 9, Young No further discloses a connector (connector 41, fig. 1) having a print engine ready data interface for coupling to the host machine (couple to

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office machine and image system fig. 1, col. 6, lines 1-5) and selectively (PC card interface, fig. 3) receiving print engine ready data therefrom.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young No (US 6587140), and in view of Murata (US 6606161).

Regarding claim 5, Young No discloses an office machine (printer 5, fig. 1) comprising:

- a print engine (printer 5 includes print engine 50, fig. 1) for rendering images; and
- a PC card slot (PC card slot 83, fig. 1) coupled to the print engine (coupled using cable 76, fig. 1) for receiving a removable PC card (removable PC card 7, fig. 1) that includes a printer formatter (PC card 7 includes CPU 92 for processing print data and transmit to print engine, fig. 2, col. 4, lines 39-45), wherein the PC card slot (PC card slot 83 for receiving processed image data from PC card and transmit to print engine via cable 76, fig. 1) is utilized to transfer formatter output from the printer formatter to the print engine.

Young No discloses an inkjet printer including a PC slot for receiving PC card (i.e. removable PC Card), but fails to teach such printer including a laser print engine having.

Murata, in the same field of endeavor for printer, teaches an office machine as shown in fig. 1 having a semiconductor laser 79 (fig. 2) for outputting images via laser beam, and such office machine also includes a PC card slot for receiving PC card (i.e. removable memory card). Please also notes: Laser printer is widely available and known in the art.

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It would have been obvious to one of ordinary skill in the art at the time of the invention was made by implementing PC card of Young No to compliance with different type of image forming apparatuses such copy machine (i.e. including laser semiconductor beam) as shown and taught by Murata because of a following reason: (●) PC card as disclosed by Young No not only work with an inkjet printer, but also compliance with a different type of image forming apparatuses, for example, laser printer, copy machine, and etc; by doing so, it provides customers (i.e. purchasers) the flexibilities of using the PC card as taught by Young No with different type of image forming apparatuses and to save purchasers (consumers) time and money.

Therefore, it would have been obvious to combine Young No with Murata to obtain the invention as specified in claim 5.

Regarding claim 6, Young No further discloses the office machine of claim 5 further comprising: a print engine ready data interface (cable 76, fig. 1) for coupling to a PC card and selectively receiving print engine ready data therefrom.

Regarding claim 7, Young No further discloses the office machine of claim 5 wherein the office machine is one of a laser printer, inkjet printer (inkjet printer 5, fig. 1), and all-in-one office machine.

Regarding claim 18, types of PCMCIA PC card is widely available and known in the art.

Claims 1, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukamoto et al (U.S. 6801328), and in view of Young No (U.S. 6587140).

Regarding claim 1, Tsukamoto discloses a printing system (printing system, fig. 1) comprising:

- a host device (PC, fig. 1) for executing programs;
- an office machine (multi-functional facsimile, fig. 1) having a print engine (multi-functional facsimile includes recording portion 110, fig. 1) for receiving print engine

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ready data and based thereon for rendering images and a PC card slot (multi-functional includes a PCMCIA interface portion 114 slot, fig. 1) for receiving PC cards (printer interface card 116, fig. 1);

- a PC card (removable printer interface card 116, fig. 1) for removably coupling with the PC card slot (PCMCIA interface portion slot 114, fig. 1 and fig. 26) of the office machine and for coupling with the host device (cable connecting from printer interface card to PC, fig. 1);

Tsukamoto discloses a PC card as shown in fig. 1, but fails to explicitly teaches a PC card having a formatter integrated circuit for providing formatter functions, the formatter integrated circuit for receiving printer controller ready data from the host device and based thereon for generating print engine ready data.

Young No, in the same field of endeavor for printing system, teaches a PC card (PC card 7, fig. 1) having a formatter integrated circuit (PC card includes CPU 92 for processing image/print data, fig. 2, col. 4, lines 39-45) for providing formatter functions, the formatter integrated circuit for receiving printer controller ready data from the host device (CPU 92 receives print data from plurality of external sources such as host computer, scanner, and/or camera, col. 6, lines 1-10) and based thereon for generating print engine ready data (PC card 7 for converting received data into print ready data to be printed by printer 5, fig. 1, col. 39-45 and col. 2, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Tsukamoto as per teachings of Young by incorporating an integrated printer controller circuit of Tsukamoto onto the PC card of Young because of a following reason: (●) to enhance the overall reliability of the imaging/printing system by reducing processing steps and components interface and reduce manufacturing costs (Young, col. 2, lines 15-18); (●) to provide more flexibility and portability to operators/users.

Therefore, it would have been obvious to combine Tsukamoto with Young to obtain the invention as specified in claim 1.

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Regarding claims 16-17, Tsukamoto further teaches the removable PC card includes a form factor that is one of a form factor of the PCMCIA type I card (printer interface card 116 is PCMCIA type II, col. 4, lines 35-42), a form factor of PCMCIA type II card, and a form factor of PCMCIA type III card. Types of PCMCIA PC card is widely available and known in the art.

Claims 2-4, 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukamoto and Young as described in claim 1 above, and in view of Benjamin et al (U.S. 6113208).

Regarding claim 2, the combinations of Tsukamoto and Young teach a PC card having a memory device for storing printer's operating program (DRAM 98, fig. 2, col. 2, lines 25-30, Young), but fail to teach printing software having an automatic update module that when executing on the host device automatically downloads to the host device from a source one of an device automatically downloads to the host device from a source one of an updated version of printer formatter firmware and the printing software.

Benjamin, in the same field of endeavor for printing, teaches wherein a printing software having an automatic update module that when executing on the host device automatically downloads (automatically downloading updated/version of printer driver via Internet/Website, col. 3, lines 50-67 to col. 4, lines 1-40) to the host device from a source one of an device automatically downloads to the host device from a source one of an updated version of printer formatter firmware and the printing software.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Tsukamoto and Young as per teachings of Benjamin because of a following reason: (1) downloading and installing the latest/newest compatible printer driver will improve operating efficiency of the printer.

Therefore, it would have been obvious to combine Tsukamoto and Young with Benjamin to obtain the invention as specified in claim 2.

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Regarding claim 3, Benjamin further teaches the printing system of claim 2, wherein the source is one of a web server (Internet web server, col. 3, lines 50-67 to col. 4, lines 1-40) and a computer readable medium.

Regarding claim 4, Benjamin further teaches the printing system of claim 2 wherein the automatic update module when executing on the host device automatically downloads (automatically downloading updated/version of printer driver via Internet/Website, col. 3, lines 50-67 to col. 4, lines 1-40) to the printer formatter an updated version of printer formatter firmware.

Regarding 10, the combinations of Tsukamoto and Young teach a printing system that includes an office machine having a print engine and a slot of receiving a PC card, a PC card for removably coupling to the office machine, the PC card having a printer formatter and a memory for storing a printer formatter program, a host having a printing software, the method comprising: determining whether the PC card (fig. 3, Tsukamoto) has been operationally coupled to the slot of the office machine.

However, the combinations fail to teach when it is determined that the PC card has been operationally coupled to the office machine, then determining whether the printer formatter program is loaded in the memory of the printer formatter, (c) when it is determined that the printer formatter program is loaded in the memory, then determining whether the printer controller program is valid; otherwise, loading the printer formatter program into the memory and repeating step (c), (d) when it is determined that the printer formatter program is valid, then determining whether the printer formatter program is compatible with the print engine, the printing software and printer formatter, (e) when it is that the printer formatter program is loaded, valid, and compatible with the print engine, the printing software and printer formatter, then sending data from the to be printed to the printer formatter.

Benjamin, in the same field of endeavor for printing system, teaches (c) when it is determined that the printer formatter program is loaded in the memory, then determining whether the printer controller program is valid (determine whether the printer driver is

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current and updated, fig. 4, col. 2, lines 15-30); otherwise, loading the printer formatter program into the memory and repeating step (c), (d) when it is determined that the printer formatter program is valid, then determining whether the printer formatter program is compatible with the print engine (determine whether the stored programs is valid and compatible with the printer, fig. 4, col. 2, lines 15-30 and col. 3, lines 50-65), the printing software and printer formatter, (e) when it is that the printer formatter program is loaded, valid, and compatible with the print engine, the printing software and printer formatter, then sending data to be printed to the printer formatter (if determine that printer program is valid, then normal printing is carried out, if not, notifying users of newer/updated version of printer program available and can be downloaded via the Internet, col. 3-4 or can be automatically downloaded newer/updated version of printer programs).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Tsukamoto and Young as per teachings of Benjamin because of a following reason: (1) downloading and installing the latest/newest compatible printer driver will improve operating efficiency of the printer; (2) to enhance the overall reliability of the imaging/printing system by reducing processing steps and components interface and reduce manufacturing costs (Young, col. 2, lines 15-18); (3) provide more flexibility and portability to operators/users.

Therefore, it would have been obvious to combine Tsukamoto and Young with Benjamin to obtain the invention as specified in claim 10.

Regarding claim 11, Benjamin further teaches when the printer controller program is one of not loaded, invalid, and incompatible, then notifying a user of the incompatibility (determine whether the current stored programs is valid and compatible, cols. 3-4).

Regarding claim 12, Benjamin further discloses when the printer controller program is one of not loaded, invalid, and incompatible, then downloading the printer controller program to the memory (downloading new/updated version of printer program, cols. 3-4, fig. 4).

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Regarding claims 13-14, Benjamin further discloses downloading the printer controller program to the printer controller further comprises: downloading the printer controller program from the host to the memory (downloading from manufacture's server and website, cols. 3-4).

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukamoto, Young, and Benjamin as described in claim 10 above, and further in view of Austin (U.S. 6665089).

The combinations of Tsukamoto, Young, and Benjamin as described in claims 10-14 above do not explicitly teach wherein the step of determining whether the printer controller program is valid further comprises: performing a cyclic redundancy check on the printer controller program.

Austin, in the same field of endeavor for printing, teaches the step of determining whether the printer controller program is valid further comprises: performing a cyclic redundancy check (Fig. 18, col. 12, lines 60-67 to col. 13, lines 1-30) on the printer controller program.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Tsukamoto, Young, and Benjamin as per teachings of Austin because of a following reason: (1) an additional method of testing (CRC checking method) increase the flexibility of testing the printer controller programs to provide an accurate results.

Therefore, it would have been obvious to combine Tsukamoto, Young, and Benjamin with Austin to obtain the invention as specified in claim 15.

Also please notes, the applicants admitted CRC checking method is widely known in the art (page 10, lines 15-19).

Response to Arguments

Applicant's arguments filed 3/14/05 have been fully considered but they are not persuasive.

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- Regarding claims 5-7, the applicants argued the cited prior art of record (US 6587140 to Young No) fails to teach and/or suggest “laser print engine for rendering images”.

In response, the examiner notes argument with respect to newly added limitation “laser print engine for rendering images” is not part of previous claims 5-7. In other words, the applicants argued subject matters that were not previously cited in claims 5-7.

- Regarding claim 1, the applicants argued the cited prior arts of record (US 6801328 and US 6587140) fail to teach and/or suggest “laser print engine”.

In response, the examiner is unable to locate any limitations regarding “laser print engine” in pending claim 1. In other words, the applicants argued subject matters that are not cited in claim 1.

- Regarding claim 1, the applicants argued cited prior arts of record (US 6801328 to Tsukamoto and 6587140 to Young No) fail to teach and/or suggest “formatting functions” performed by the formatter IC.

In response, the examiner disagrees with the applicants’ assertions. Young No explicitly teaches PC card includes CPU 92 for processing image/print data, fig. 2, col. 4, lines 39-45 and to receive print data from plurality of external sources such as host computer, scanner, and/or camera, col. 6, lines 1-10 and to convert received data into print ready data to be printed by printer 5, fig. 1, col. 39-45 and col. 2, lines 25-30. According to the applicants’ original filed specification, PC card 50 includes printer formatter circuit 54 for formatting functions, however, the applicants did not suggest what types of formatting functions printer formatter circuit 54 performs. Young No explicitly teaches “the intelligence circuit 90 also includes EEPROM 96 for storing an operating program for the microprocessor 92 that allows it to convert the data stream received from the imaging unit 33 into printer instructions, col. 4, lines 39-45”. The examiner interprets converting the data stream received from the imaging unit 33 into printer instructions is equivalent to “formatting function” as argued by the applicants.

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In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, (●) to enhance the overall reliability of the imaging/printing system by reducing processing steps and components interface and reduce manufacturing costs (Young, col. 2, lines 15-18); (●) to provide more flexibility and portability to operators/users, in other words, PC card 7 can be detached and used with different image forming apparatuses.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L. Pham whose telephone number is (571) 2727439. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

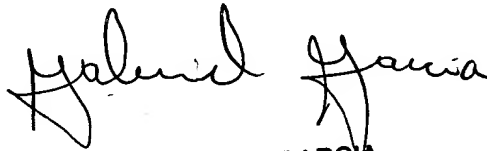
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571)272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham

TP



GABRIEL GARCIA
PRIMARY EXAMINER